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ABSTRACT

The effects of five elaboration conditions on the paired associate learning of 50 educable mentally retarded children (mean age 9 years) were investigated. Four of the conditions were included in a two factor design (type of relation x familiarity); the fifth (nonsense condition) was included as an outside control. Ten children were tested in each condition. Results indicated that quality and familiarity of stimuli influenced elaborational effectiveness. The dominant finding was a significant interaction between type of relation and familiarity, with positional-unfamiliar elaborations being the least facilitative in the two factor design. The nonsense condition produced the poorest performance levels across the five conditions, especially for Ss identified as being more severely retarded. (DB)

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RELATIONS AND THE EFFECTIVENESS OF VERBAL ELABORATIONS

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The University of Minnesota Research, Development and Demonstration Center in Education of Handicapped Children has been established to concentrate on intervention strategies and materials which develop and improve language and communication skills in young handicapped children.

The long term objective of the Center is to improve the language and communication abilities of handicapped children by means of identification of linguistically and potentially linguistically handicapped children, development and evaluation of intervention strategies with young handicapped children and dissemination of findings and products of benefit to young handicapped children.

Abstract

The effects of five elaboration conditions on the paired-associate learning of educable mentally retarded children were investigated. Four of the conditions were included in a two-factor design (Type of Relation X Familiarity); the fifth (Nonsense condition) was included as an outside control. Ten elementary-aged children were tested in each condition. The results clearly indicated that quality and familiarity do influence elaborational effectiveness. The dominant finding was a significant interaction between type of relation and familiarity, with Positional-Unfamiliar elaborations being the least facilitative in the two-factor design. The Nonsense condition produced the poorest performance levels across the five conditions, especially for subjects identified as being more severely retarded. The implications of these findings for the development of instructional materials and training procedures for young and mentally retarded children are discussed.

Relations and the Effectiveness of Verbal Elaborations

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Impressive facilitation of paired-associate learning occurs when the items to be learned are presented within verbal elaborations (e.g., sentences). Although the effectiveness of embedding noun pairs in various types of verbal elaborations has often been demonstrated (cf. Jensen & Rohwer, 1963; MacMillan, 1970; Milgram, 1968; Turnure, 1971; Turnure & Walsh, 1971), it is important to explore the specific characteristics of verbal elaborations which make them effective for various types of children. Not only will such investigations help clarify some of the theoretical ambiguities concerning the basis for the facilitative effects of verbal elaborations, but they will also provide a valuable basis for developing instructional materials and training procedures for young and mentally retarded children.

Initially, grammatical relations and surface structure factors were posited in attempts to explain the basis of the observed facilitation resulting from elaborations (Rohwer, 1966; Rohwer & Levin, 1968; Rohwer & Lynch, 1966, 1967; Suzuki & Rohwer, 1968, 1969; cf. Turnure & Thurlow, Note 1). More recently, it has been suggested that the formation of semantic relations is of primary importance in determining the effectiveness of an elaboration (cf. Ehri & Richardson, 1972; Ehri & Rohwer, 1969; Thurlow & Turnure, 1972; Turnure, 1971; Turnure & Thurlow, 1973). In fact, after a decade of research on verbal elaborations, Rohwer (1973) defined an "elaboration" in relational terms: "At a minimum, an [elaborative] event is conceived to consist of two

objects (or, more abstractly, topics) and some episode, process, or relation involving both of them, either explicitly or by implication or by entailment" (p. 5). Even with the growing recognition of the central role of some type of relational "quality" on the facilitation from elaborations, there have been only a few attempts to investigate the nature or function of this quality on the ability of an elaboration to facilitate learning.

After investigating the elaborations generated by normal, EMR, and TMR children, Milgram (1968) proposed that there were four types of relations expressed in the elaborations. He categorized the relations as: a) Nonsensical (e.g., the bird eats the train), b) Positional (e.g., the bird is on the train), c) Functional (e.g., the bird flies over the train), and d) Original or novel (usually involves a third term which relates S and R, e.g., the engineer in the train caught a bird in a cage). This categorization represented an ordered scale, from what was expected to be least effective to what was expected to be most effective.

Milgram analyzed the relationship between subject category (normal, EMR, TMR) and type of relation (nonsensical, positional, etc.) as well as the relationship between type of relation and performance level. Essentially no differences were found. Milgram, however, cited studies that had examined the effectiveness of experimenter-supplied sentences (Davidson, 1964; Rohwer, 1966) and had found certain types of sentences (e.g., declaratives) to result in better performance than others. Milgram concluded that such differences as had been found between declarative and conjunctive phrases merely reflected the differences between providing an associative bond, and not providing one.

Other attempts to look at the effects of different types of relations have concluded that normal sentences are better than anamolous ones or nonmeaningful ones (Rohwer, 1966; Rohwer & Levin, 1968), but have failed to agree on the effects of different types of relations, say positional and functional. On the basis of Rohwer's (1973) definition of the "quality" of an elaboration as the "degree to which the event integrally incorporated the items to be associated," one might expect that a functional relation would be more effective than a positional one. Several studies with normal children have suggested that functional relations are in fact more effective (e.g., Davidson, 1964), but the potential effects of this variable on the efficacy of elaborations provided to the EMR child by an adult have not been extensively explored.

A further factor which might influence the effectiveness of an elaboration is its familiarity to the child. The importance of familiarity and meaningfulness are frequently stressed by educators (Elliott, 1970), and one might hypothesize that the degree to which a communication provides connections to things familiar or known to a child will also be directly related to the quality of that elaboration for a particular child. This factor might prove to be an extremely important one for the EMR child, whose range of experiences is generally more limited than that of the normal child.

The present study was undertaken to compare the effects of different types of elaborations which vary in familiarity. Specifically, five elaboration types were compared (Functional-Familiar, Functional-Unfamiliar, Positional-Familiar, Positional-Unfamiliar, and Nonsense)

to determine their effects on the learning of educable mentally retarded children.

Method

Subjects

Fifty educable mentally retarded (EMR) children from an urban public school system were employed as subjects in the present study. Half of the children were EMRs from special classrooms within regular public schools; the other half were EMRs from classes in a school serving only retarded children (both EMR and TMR). Administrative assignment to the two types of schools was determined mainly through an assessment of the child's potential for return to a "normal" classroom. Children within the special classes in the regular public schools were believed to be more likely to move back into "normal" classes than were children in the school serving only retarded children.

Ten children (five children from each type of school) were randomly assigned to each of the five conditions in the present study. IQ, CA, and MA data (see Table 1) on the children, obtained after the study was completed, were analyzed by means of one-way analyses of variance. No significant differences emerged [IQ: $F(4,45) < 1$; CA: $F(4,45) = 1.83$; MA: $F(4,45) = 1.69$]. There were, however, significant differences between the two population groups, with the subjects in the regular schools being older and having higher MAs and IQs than the subjects in the special school.

Table 1

Means and Standard Deviations of IQs, CAs, and MAs for

Two Subject Groups in Five Experimental Conditions

	IQ		CA		MA	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
FF						
Regular School	73.2	6.3	123.4	4.8	83.2	16.2
EMR/TMR School	60.8	10.4	100.2	11.7	63.0	10.4
FU						
Regular School	72.2	2.6	118.4	6.0	87.0	6.5
EMR/TMR School	71.6	12.1	109.2	10.4	80.8	16.7
PF						
Regular School	70.4	8.3	115.6	10.5	78.6	11.7
EMR/TMR School	61.6	5.4	102.6	9.3	63.8	7.7
PU						
Regular School	69.6	9.3	121.8	3.5	85.4	11.9
EMR/TMR School	62.2	8.9	116.4	6.3	74.2	13.8
N						
Regular School	73.2	3.6	119.4	9.4	88.4	5.3
EMR/TMR School	61.2	6.4	119.6	10.8	73.0	5.2

Design

The effects of five experimental conditions were investigated. Four of the conditions were included in a two-factor design; the fifth was included as an outside control condition. The two main factors of interest were: (a) type of relation (functional vs. positional), and (b) familiarity of the relational event (familiar vs. unfamiliar). The four conditions resulting from the two-factor design were the following:

Functional-Familiar (FF) - items were combined in elaborations which represented a familiar, functional relation between the subject and object (e.g., The key is opening the door).

Functional-Unfamiliar (FU) - items were combined in elaborations which represented functional relations between the subject and object, but ones which are not familiar (e.g., The key is opening the wagon).

Positional-Familiar (PF) - items were combined in elaborations which represented a familiar positional relation between the subject and object (e.g., The key is in the jacket).

Positional-Unfamiliar (PU) - items were combined in elaborations which represented positional relations that were not familiar (e.g., The key is in the chair).

The Nonsense (N) condition was made up of sentence elaborations where the functional relationship between the subject and the object was inconsistent with experience (e.g., The key is jumping over the basket), or, in linguistic terms, the sentence constructions violated lexical co-occurrence restrictions.

Materials

Experimental materials were colored pictures of common objects,

taken from a preprimer workbook and mounted on white cardboard (8.9 x 6.4 cm.). Twelve pictures were selected to be the stimulus pictures in the paired-associate task. The selection of these was essentially random, with the restriction that each stimulus object chosen was one which could be related to another object by some operation or action it might perform on or to a second object.

Twenty-four pictures were used as response items. In the four conditions of the two-way design, the response items were counterbalanced so that each factor contained the same set of response terms (e.g., Familiar and Unfamiliar conditions had the same 24 items for responses). All 12 pairs, however, were not the same within the individual conditions (e.g., response items in FF were not the same twelve as in FU). The pairing of the stimulus and response items was determined by the needs of the Familiar conditions. First, pairs were formed so that the requirements of the FF and PF conditions were met. Next, the remaining response terms were randomly paired with the stimulus terms to form pairs for the FU and PU conditions. Of course, this randomization process was modified in cases where the pairs formed actually were familiar ones.

The pairs in the Nonsense condition were formed by randomly selecting half the response items, and pairing them with the stimulus items. The functional relation established for each stimulus item was changed to be inconsistent with the possible functions of the stimulus item.

(See Appendix 1 for a complete list of the pairs and elaborations in each of the five conditions.)

Procedure

Subjects were tested individually in the present study. Each

testing session included pretraining, acquisition training, a test trial, and a reversal trial. Instructions for each phase of the testing session were the same for the five experimental conditions; only the stimulus and response pairs, and their elaborations, varied between conditions.

During pretraining, the child was told to look at the pictures he would be shown, to listen to what the experimenter said about them, and then to say the same thing himself. Practice was allowed with one pair (crayon - fan). The elaboration used for this pair varied only along the dimension of type of relation (Functional: The crayon is writing on the fan; Positional: The crayon is under the fan; Nonsense: The crayon is eating the fan).

Following pretraining, acquisition training began. The child was reminded of what he had just done, and was asked to continue doing the same thing ("Each time I show you two pictures together, listen to what I say, then you say the same thing after me."). Each of the 12 pairs of pictures was presented for 15 seconds, during which the experimenter was to utter the elaboration and the subject repeat it. Only a few subjects required more than 15 seconds to complete the repetition of the elaboration, and this occurred only with one or two pairs. When 15 seconds had passed, the experimenter immediately removed the pictures from the child's view, but allowed him up to 15 additional seconds to complete his responding.

After all 12 pairs had been presented in this manner, the test trial began. During this trial, the child was shown only the stimulus item of a pair, and was asked to name the picture that "goes with

it." A response interval of up to 20 seconds was allowed for each pair. After a response, or after 20 seconds, the child was briefly shown the stimulus and response pictures together before the next test item was presented.

Upon conclusion of the test trial, the child was immediately presented with the reversal trial, without being informed of any change of procedure. During this trial, the subject was shown a response item, and was expected to name the picture that was paired with it (i.e., the stimulus). All 12 pairs were tested during the reversal trial, and timing procedures were the same as during the test trial.

Results

Acquisition

The mean numbers of correct responses made during the test trial are presented in Table 2, for the five experimental conditions in the two school settings. These results are presented graphically in Figure 1.

Analysis of just the four cells in the two-way replicated experiment design indicated that the Relation factor (Functional vs. Positional) [$F(1,32) = 5.75$, $p < .025$] and the interaction of the Relation and Familiarity (Familiar vs. Unfamiliar) factors [$F(1,32) = 6.87$, $p < .025$] were significant. The replication factor was not significant. A Newman-Keuls test on the four combined means revealed that the Functional-Familiar, Functional-Unfamiliar, and the Positional-Familiar conditions had significantly higher means than the Positional-Unfamiliar condition.

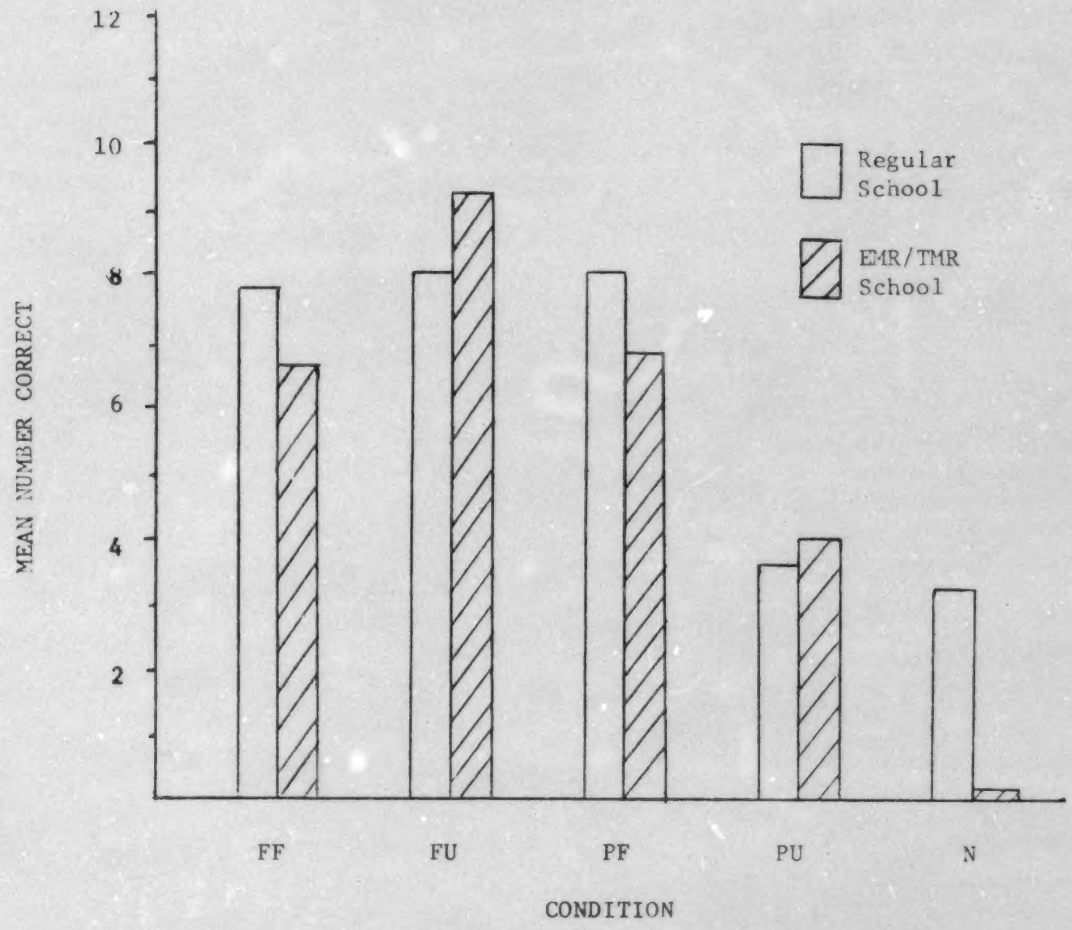
Table 2

Means and Standard Deviations of Acquisition Number Correct

	"Regular" School	EMR/TMR School	Combined
Functional-Familiar			
$\bar{X}$	7.8	6.6	7.2
SD	1.6	4.0	2.9
Functional-Unfamiliar			
$\bar{X}$	7.4	9.2	8.3
SD	3.0	3.0	3.0
Positional-Familiar			
$\bar{X}$	8.0	6.8	7.4
SD	2.9	2.2	2.5
Positional-Unfamiliar			
$\bar{X}$	3.6	4.0	3.8
SD	2.4	2.0	2.5
Nonsense			
$\bar{X}$	3.2	0.2	1.7
SD	1.9	0.4	2.0

Figure 1

Acquisition Mean Number Correct



Observation of Figure 1 and Table 2 suggests that in the Nonsense condition, the two groups of subjects did not perform comparably. A t test of the means for the subjects from the "regular" schools versus those from the EMR/TMR school confirmed this observation [$t(8) = 3.09$, $p < .05$]. The children placed in schools containing only special classes performed significantly poorer in the Nonsense condition than did children in the "regular" schools. When the two school groups in the Nonsense condition were combined and compared with the other four conditions in a one-way analysis of variance, the Condition factor was significant [$F(4,45) = 11.45$, $p < .001$]. A Newman-Keuls test on the means indicated that performance in the Nonsense condition was significantly poorer than in the other four conditions (all ps $<.01$) and that performance in the Positional-Unfamiliar condition was significantly poorer than in the Functional-Familiar, Functional-Unfamiliar, and Positional-Familiar conditions (all ps $< .01$), as had been indicated in the followup analysis of the replicated experiment analysis of variance.

Because the two subject groups did perform significantly different in the Nonsense condition, however, more appropriate analyses might be those within subject groups. A one-way analysis of variance of the number correct for the children in the "regular" schools generally confirmed the combined results, except that the Nonsense and Positional-Unfamiliar conditions were not different from each other (all ps $< .05$). For the "special" schools, the Nonsense condition was different from the other four conditions (N-PU: $p < .05$; N-FF, N-FU, N-PF: ps $< .01$), thus confirming the combined analysis. In addition, the Positional-

Unfamiliar condition was different from the Functional-Unfamiliar condition ($p < .05$).

It should be noted that the overall greater facilitation found for the Functional-Familiar, Functional-Unfamiliar, and the Positional-Familiar conditions was evident in the breakdown of performances in each item-pair (see Appendix 2). In some cases, however, individual elaborations did not result in the expected performance levels. For example, on the first pair, nearly as many subjects in the Functional-Familiar condition made errors as in the Positional-Unfamiliar condition.

Reversal

The mean numbers of correct responses made during the reversal trial for the five experimental conditions in the two school settings are presented in Table 3. These results are presented graphically in Figure 2.

Analysis of just the four cells in a two-way replicated design indicated that the interaction of the Relation (Functional vs. Positional) and the Familiarity (Familiar vs. Unfamiliar) factors was significant [$F(1,32) = 4.95$, $p < .05$]. The replication factor was not significant. A Newman-Keuls test on the four combined means failed to identify any of the differences between means as significant.

Observation of Figure 2 and Table 3 suggests that subjects in both groups performed comparably in all conditions, possibly excepting the Nonsense condition. A t test of the Nonsense condition means for subjects from the "regular" schools versus those from the EMR/TMR school, however, indicated that the difference was not significant [$t(8) = 2.12$].

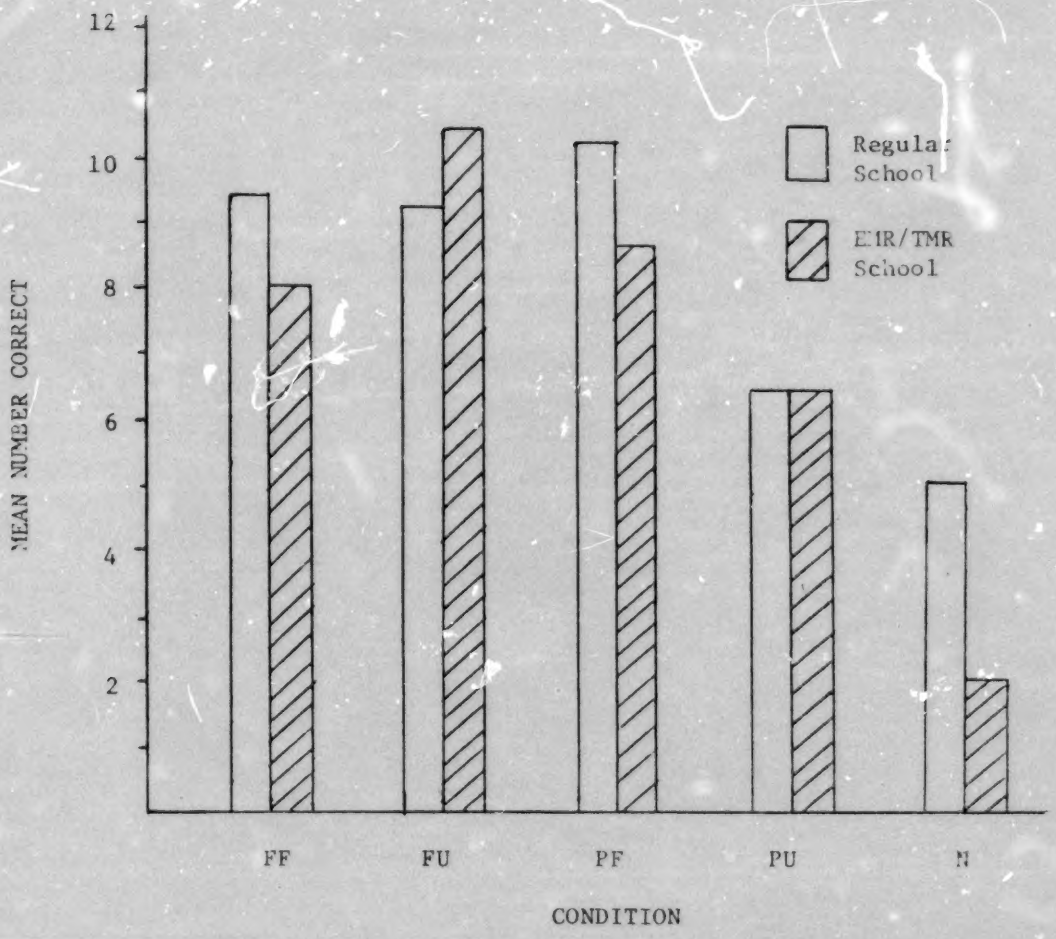
Table 3

Means and Standard Deviations of Reversal Number Correct

	"Regular" School	EMR/TMR School	Combined
Functional-Familiar			
$\bar{X}$	9.4	8.0	8.7
SD	1.5	4.4	3.2
Functional-Unfamiliar			
$\bar{X}$	9.2	10.4	9.8
SD	2.6	1.8	2.2
Positional-Familiar			
$\bar{X}$	10.2	8.6	9.4
SD	1.3	1.1	1.4
Positional-Unfamiliar			
$\bar{X}$	6.4	6.4	6.4
SD	3.6	4.5	8.9
Nonsense			
$\bar{X}$	5.0	2.0	3.5
SD	2.0	2.0	2.5

Figure 2

Reversal Mean Number Correct



When the two school groups in the Nonsense condition were combined and compared with the other four conditions in a one-way analysis of variance, the condition factor was significant [$F(4,45) = 9.08$, $p < .001$]. A Newman-Keuls test on the means indicated that the performance in the Nonsense condition was significantly poorer than in the Functional-Familiar, Positional-Familiar, and Functional-Unfamiliar conditions (all $ps < .01$); no other significant differences were found.

Discussion

The results of the present study indicate that "quality" and familiarity do influence elaborational effectiveness. The influence, however, does not appear to be a straightforward one. Clearly, the absence of a meaningful and familiar relation within an elaboration (as in the Nonsense condition) reduced learning efficiency. This was evident from the results of both the acquisition task and the reversal task, and was especially true for the students from the "special" school population. Apparently, although the sentences in the Nonsense condition contained identifiable relations (e.g., "talking to," "running after"), the "nonsensical" implications of the specific events depicted reduced their effectiveness to the same degree as providing no associative bond between the stimulus and response (cf. Milgram, 1968), at least for the special school population.

Within the four types of elaborations which contained a meaningful relation, there was no clear-cut finding as to the importance of either the type of relation (functional vs. positional) or the familiarity of the relation (familiar vs. unfamiliar). The dominant finding was

the significant interaction between the two factors. In both the acquisition and reversal tasks, the ordering of the conditions was the same. The subjects in the Functional-Familiar, Functional-Unfamiliar, and Positional-Familiar were characterized by relatively high performance levels, while the Positional-Unfamiliar performance level was quite a bit lower. This finding was most evident in the acquisition task, and was found to be statistically significant there. Significant separation was not obtained in the reversal task.

The failure to find a definite relationship between type of relation and performance level appears to agree with the findings of Milgram (1968). That is, essentially no differences were found between the effects of functional and positional relations when the effects of familiarity were not considered. The relations produced by Milgram's subjects would most likely be considered "familiar," since subjects are unlikely to generate relations unfamiliar to themselves, and thus the similarity of his data and the present data with respect to type of relation are even more striking. Milgram (1968), however, did not find that nonsensical relations were less effective than meaningful relations, whereas in the present study a definitely lower performance level was observed for subjects in the Nonsense condition. This discrepancy in data very likely arises from the fact that Milgram's subjects generated their own relations. While a "bird eating a train" might be a nonsensical relation to the experimenter or another child, for the individual creating the relation it might very well have been quite functional and "sensible," given the task circumstances. To the extent that the one example Milgram provides is representative of the

subjects' production, their constructions appear at least to provide for subject-verb (or action) compatibility, while all of the nonsense formulations provided in this study were constructed specifically to violate this coherence requirement.

As an independent factor, familiarity does not seem to have straightforward effects on elaborational effectiveness. At first, such a finding might lead one to question the validity of the emphasis frequently put on familiarity by educators (cf. Elliott, 1970). The interaction between type of relation and familiarity found in the present study, however, suggests that familiarity becomes extremely important when other conditions are not optimal for promoting effective learning. In other words, it appears that functional relations form an "optimal" condition for learning, and thus it does not matter whether the relation is one usually experienced or not. This suggestion is supported by the fact that during acquisition, type of relation was a significant factor, with functional relations resulting in a significantly superior level to that from positional relations. When optimal learning conditions do not exist, however, as is posited to be the case for the positional relations, the effects of familiarity emerge. Thus, positional relations which were familiar resulted in a performance level approximately equal to that under optimal conditions. When the positional relations were unfamiliar, however, the performance level dropped significantly.

A discrepancy between the performance levels of EMR children found within regular public schools and EMR children found in a special school emerged quite strongly in the Nonsense condition. Despite the fact that there were significant differences between the two groups in

terms of IQ, MA, and CA, these differences cannot account for the performance difference in the Nonsense condition because the same magnitude of sample differences existed in the other conditions, but no performance differences were found in these conditions. The finding thus emphasizes the particularly ineffective results derived from giving nonmeaningful elaborations to children who might be characterized as more severely retarded.

The ineffectiveness of the Nonsense condition, in which the elaborations presented might be characterized as bizarre, would be considered at variance with recommendations by mnemonists that generating bizarre images generally benefits memory (cf. Lorayne & Lucas, 1974). The restriction of this finding to the more severely retarded or "defective" population might serve to relegate it to the gross explanatory category of "abnormal results from abnormal groups." However, Odom-Brooks (Note 2) has recently reported that normal kindergarten children performed significantly poorer on an imagery task when given inprobable "images." Thus, the finding has sufficient generality to warrant further investigation.

Although the effect of relation type is somewhat obscured by the interaction of relation type and familiarity, the importance of providing some type of relation has previously been made clear. Most notable, of course, is the difference between the performance levels of children given only the labels for two items to be associated and those given paragraphs which provide a relation-based event involving the same two items (cf. Turnure, 1971; Turnure & Walsh, 1971). The importance of the existence of a relation in an elaboration, rather than

the structural format of the elaboration, has been previously demonstrated (Turnure & Thurlow, 197[illegible]; Turnure & Thurlow, in press). It seems that the important factor is the degree to which the learning conditions cause the subject's awareness of the semantic relations between the paired-associates (cf. Turnure, Buium, & Thurlow, Note 3). Some language theorists have taken extreme views on this. For example, Lenneberg (1973) has said, "Language is relational in every aspect and at every term. Hence to teach someone to speak is essentially to invite him to relate aspects of the environment in such and such a way" (p. 6). However, Klaus F. Riegel (1970) adds specificity to these general comments when he argues for the "priority of relations over elements" (p. 224). Research inspired by relational theorists (cf. Asch, 1969; Asch & Ebenholz, 1962) has had an impact both in theory and in practice (Taylor, Thurlow & Turnure, Note 4; Thurlow, Taylor, & Turnure, Note 5).

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Appendix 1

Pairs and Elaborations in Five Conditions

Functional-Familiar (FF)

1. The pig is eating the carrots.
2. The key is opening the door.
3. The scissors are cutting the box.
4. The toaster is burning the donuts.
5. The shoes are kicking the hat.
6. The shovel is digging up a comb.
7. The dog is jumping over the fence.
8. The ball is hitting the chair.
9. The broom is sweeping up the leaf.
10. The girl is baking a pie.
11. The candle is melting the soap.
12. The pencil is writing in the book.

Functional-Unfamiliar (FU)

1. The pig is eating the basket.
2. The key is opening the wagon.
3. The scissors are cutting the table.
4. The toaster is burning the box.
5. The shoes are kicking the soap.
6. The shovel is digging up a bed.
7. The dog is jumping over the bat.
8. The ball is hitting the door.
9. The broom is sweeping up the carrots.
10. The girl is baking a leaf.
11. The candle is burning the trees.
12. The pencil is writing in the pie.

Positional-Familiar (PF)

1. The pig is inside the barn.
2. The key is in the jacket.
3. The scissors are in the basket.
4. The toaster is on the table.
5. The shoes are in the boots.
6. The shovel is under the trees.
7. The dog is by the wagon.
8. The ball is with the bat.
9. The broom is next to the bed.
10. The girl is behind the gun.
11. The candle is in the window.
12. The pencil is on the desk.

Positional-Unfamiliar (PU)

1. The pig is inside the window.
2. The key is in the chair.
3. The scissors are in the jacket.
4. The toaster is on the fence.
5. The shoes are in the desk.
6. The shovel is under the hat.
7. The dog is by the book.
8. The ball is in the boots.
9. The broom is next to the gun.
10. The girl is on the barn.
11. The candle is on the comb.
12. The pencil is on the donuts.

Nonsense

1. The pig is shouting at the donuts.
2. The key is jumping over the basket.
3. The scissors is running after the bat.
4. The toaster is opening the jacket.
5. The shoes are cutting the window.
6. The shovel is jumping over the box.
7. The dog is talking to the pie.
8. The ball is looking at the carrots.
9. The broom is singing to the wagon.
10. The girl is barking at the desk.
11. The candle is hitting the book.
12. The pencil is eating the fence.

Appendix 2

Stimulus-Response Pairs and the Percentage of Subjects in Each Condition Erring on Each Pair

1. Pig -

a.	FF:	Carrots	70%
b.	FU:	Basket	40%
c.	PF:	Barn	20%
d.	PU:	Window	80%
e.	N:	Donuts	100%

2. Key -

a.	FF:	Door	20%
b.	FU:	Wagon	40%
c.	PF:	Jacket	60%
d.	PU:	Chair	60%
e.	N:	Basket	90%

3. Scissors -

a.	FF:	Box	50%
b.	FU:	Table	20%
c.	PF:	Basket	90%
d.	PU:	Jacket	70%
e.	N:	Bat	90%

4. Toaster -

a.	FF:	Donuts	10%
b.	FU:	Box	40%
c.	PF:	Table	0%
d.	PU	Jacket	70%
e.	N:	Jacket	70%

5. Shoes -

a.	FF:	Hat	70%
b.	FU:	Soap	40%
c.	PF:	Boots	10%
d.	PU:	Desk	60%
e.	N:	Window	80%

6. Shovel -

a.	FF:	Comb	40%
b.	FU:	Bed	10%
c.	PF:	Trees	30%
d.	PU:	Hat	100%
e.	N:	Box	90%

7. Dog -

a.	FF:	Fence	50%
b.	FU:	Bat	50%
c.	PF:	Wagon	50%
d.	PU:	Book	80%
e.	N:	Pie	90%

8. Ball -

a.	FF:	Chair	50%
b.	FU:	Door	40%
c.	PF:	Bat	30%
d.	PU:	Boots	70%
e.	N:	Carrots	100%

9. Broom -

a.	FF:	Leaf	20%
b.	FU:	Carrots	30%
c.	PF:	Bed	20%
d.	PU:	Gun	70%
e.	N:	Wagon	90%

10. Girl -

a.	FF:	Pie	30%
b.	FU:	Leaf	10%
c.	PF:	Gun	40%
d.	PU:	Barn	20%
e.	N:	Desk	60%

11. Candle -

a.	FF:	Soap	40%
b.	FU:	Trees	30%
c.	PF:	Window	30%
d.	PU:	Comb	60%
e.	N:	Book	80%

12. Pencil -

a.	FF:	Book	10%
b.	FU:	Pie	20%
c.	PF:	Desk	60%
d.	PU:	Donuts	80%
e.	N:	Fence	90%

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